network

Flashlink User Manual

DA-AES

AES Distribution Amplifier

network-electronics.com

Rev. 7

Revision history

The latest version is always available in pdf-format on our web-site:

http://www.network-electronics.com/

Current revision of this document is the uppermost in the table below.

Revision	**Replaces**	**Date**	Change Description
7	6	2008-07-14	Added Declaration of Conformity.
6	5	2007-10-25	New front page and removed old logo.
5	4	2007-10-05	Added Materials Declaration and EFUP
4	3	05.10.05	Removed comment regarding Gyda override chapter 3
3	2	16.11.04	Gyda override description corrected chapter 4
2	1	10.11.04	Errors regarding pin numbering corrected in chapter 4
1	0	12.10.04	Changed from Gyda to DIP in chapter 3. Changed 1:4 cross mode.
0	A	27.04.04	Changed chapter 3
A		23.01.04	Preliminary version

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1. General

The flashlink® DA-AES is a Digital Audio Distribution Amplifier. The DA-AES can be configured as either 1 input and 8 outputs or dual 1 input and 4 outputs. The Distribution Amplifier supports sample rate 15-96 kHz and has balanced inputs and outputs. The DA-AES is designed for all digital audio distribution purposes in studio, duplication and Broadcast applications.

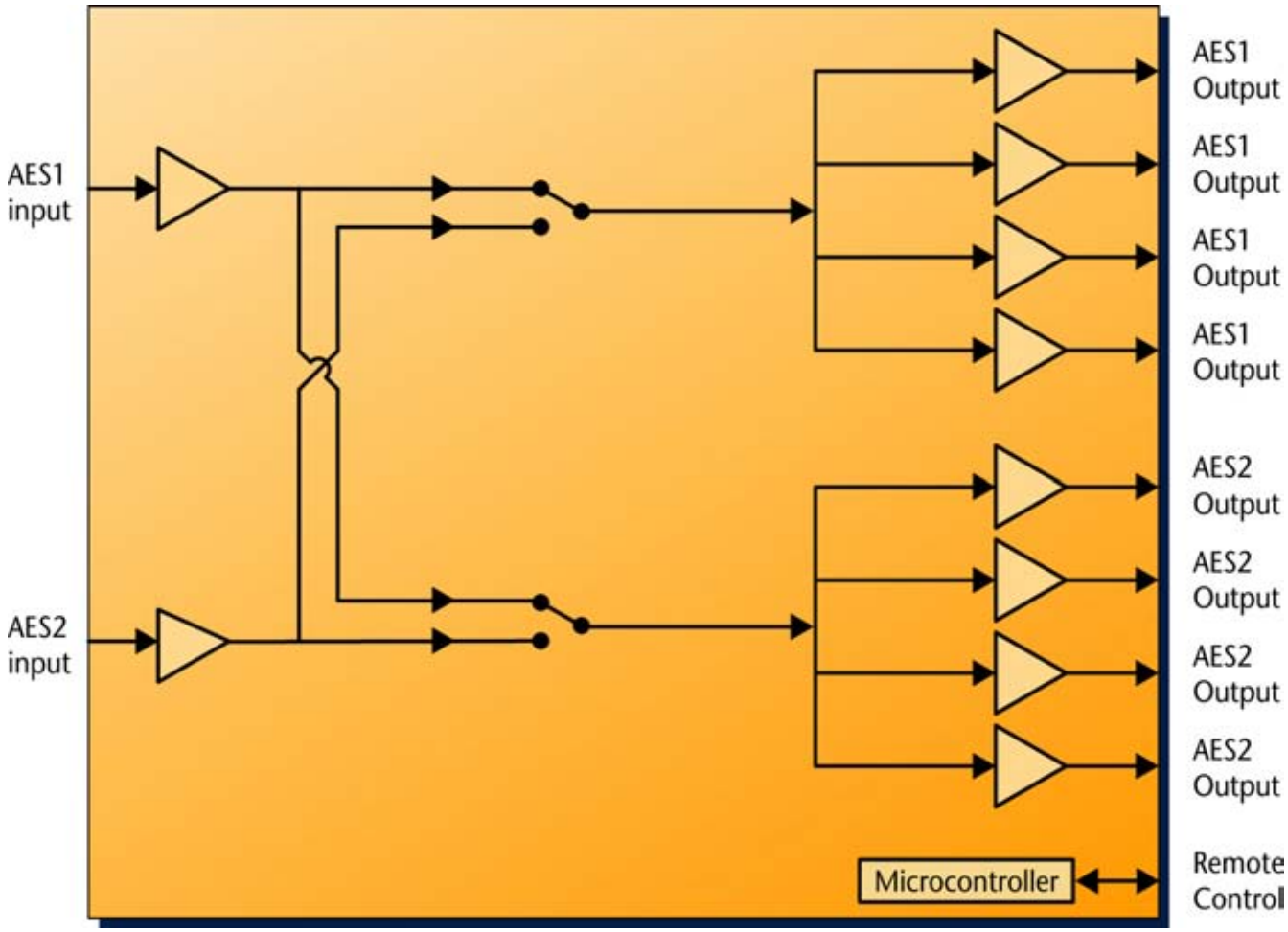

Figure 1 – DA-AES - AES Distribution Amplifier

2. Specifications

Electrical Input:

Number of inputs:	1 or 2
Standard:	AES-3
Supported Sample Rate:	15-96 kHz
Signal Amplitude:	0.2-7Vp-p
Connector:	DB15 balanced
Impedance:	110 ohms nominal

Electrical Output:

Number of outputs:	8 or 4+4
Connector:	DB25 balanced
Signal amplitude:	4Vp-p ±1Vp-p
Impedance:	110 ohms nominal

Features:
Configurable dual 1 input to 4 outputs or single 1 input to 8 outputs

Electrical:

Power:	+5V DC / 0.5 W
Control:	Control system for access to setup and module status with BITE (Built-In Test Equipment) for use with GYDA Control System

3. Format Configuration

The DA-AES supports either single1 input to 8 outputs or dual two inputs to 4 outputs.

SW1-1	SW1-2	SW1-3	Function
Off	Off	On	AES1 input to AES1 outputs, AES2 input to AES2 outputs
Off	On	On	AES1 input to AES2 outputs, AES2 input to AES1 outputs
On	Off	On	AES1 input to AES1 and AES2 outputs
On	On	On	AES2 input to AES1 and AES2 outputs
X	X	Off	Gyda controls the setting

DIP switch SW1-4 is reserved for future options.

When DIP switch 1-3 is on, LEDs should blink when DIP switch 1-1 or 1-2 is changed.

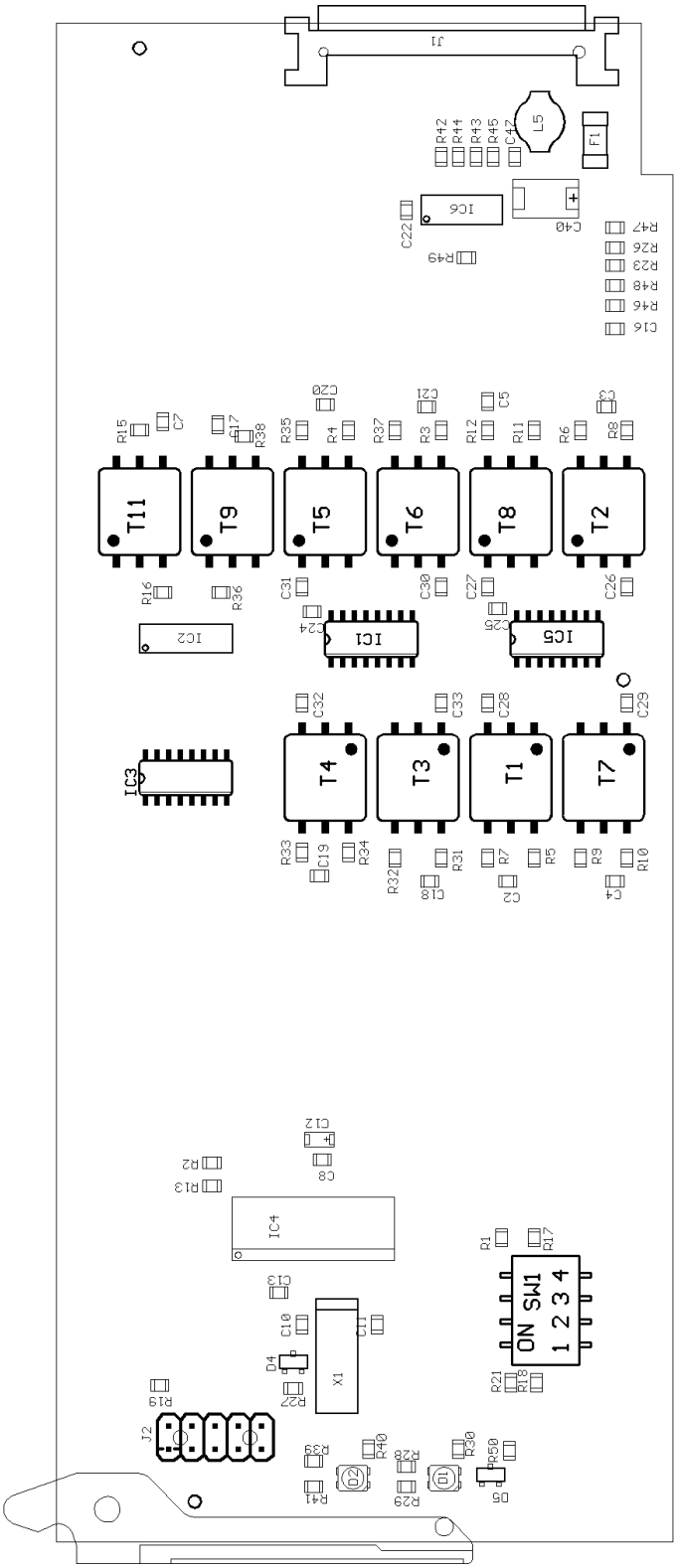

Figure 2 – DA-AES board layout.

4. Connector module

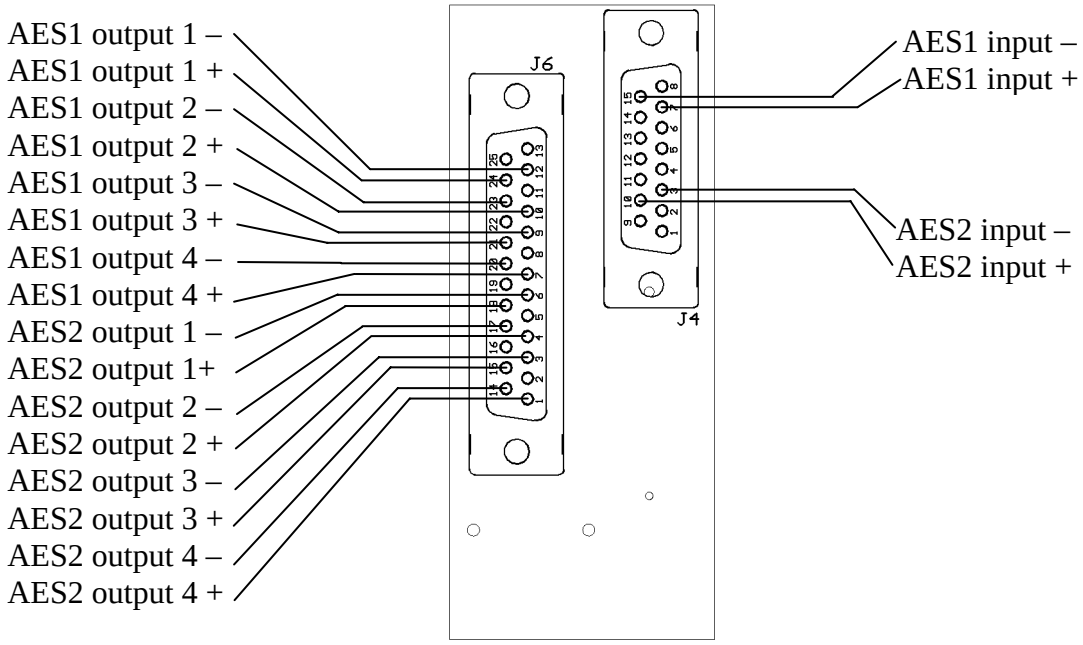

Figure 6 - Overview of the AES-C1 connector module

The DA-AES has a dedicated connector module: AES-C1. This module is mounted at the rear of the sub-rack. The module is shown in figure 6. J4 is the input DSUB connector, while J6 is the output connector.

J4:

Function	Pin
AES channel 1 positive input (AES1 +)	7
AES channel 1 negative input (AES1 –)	15
AES channel 2 positive input (AES2 +)	10
AES channel 2 negative input (AES2 –)	3
Ground	2, 5, 8, 11, 14

J6:

Function	Pin
AES channel 1 positive output 1	24
AES channel 1 negative output 1	12
AES channel 1 positive output 2	10
AES channel 1 negative output 2	23
AES channel 1 positive output 3	21
AES channel 1 negative output 3	9
AES channel 1 positive output 4	7
AES channel 1 negative output 4	20
AES channel 2 positive output 1	18
AES channel 2 negative output 1	6
AES channel 2 positive output 2	4
AES channel 2 negative output 2	17
AES channel 2 positive output 3	15
AES channel 2 negative output 3	3
AES channel 2 positive output 4	1
AES channel 2 negative output 4	14
Ground	2, 5, 8, 11,13, 16,19,22,25

4.1 Mounting the connector module.

The details of how the connector module is mounted, is found in the user manual for the sub-rack frame FR-2RU-10-2.

This manual is also available from our web site: http://www.network-electronics.com/

5. Module status

The status of the module can be monitored in three ways.

1. GYDA System Controller (optional).
2. LED's at the front of the sub-rack.

LED's are mounted on the module itself, whereas the GYDA System Controller is a separate module giving detailed information on the card status. The functions of the LED's are described in sections 5.1. The GYDA controller is described in a separate user manual.

5.1 Front Panel - Status Monitoring

The status of the module can be easily monitored visually by the LED's at the front of the module. The LED's are visible through the front panel. The LED on top tells if the DA-AES is ok or not (green LED meas ok – red is alarm). The second led tells if there is an AES stream present on one or both input channels. When data stream is present, the LED is green. If there is no data stream, the LED is red.

The DA-SDI has 4 LED's each showing a status corresponding to the GPI pinning. The position of the different LED's is shown in figure 8.

Diode \ state	**Red LED**	**Yellow LED**	**Green LED**	**No light**
Status	Module is faulty		Module is OK Module power is OK	Module has no power
Signal on ch1	Signal not present		Signal present	
Signal on ch2	Signal not present		Signal present	

6. Interface with GYDA and RS-422 command set

All commands follow the flashlink protocol and can be used for direct control access to the modul. The control system can either be a GYDA-SC or a third-party control system with integrated flashlink protocol. The module can also be manually controlled with a VT100 compatible terminal program.

The protocol can be found on our web page; http://www.network-electronics.com

6.1 DA-AES Command table

Command	**Response**	**Comment**
?	*See protocol description*	The *"hello"* command
info	Module status information	
reset	OK	Set input configuration to DIP switch setting
set norm8	OK	Set AES1 input to AES1 and AES2 outputs
set norm4	OK	Set AES1 input to AES1 outputs and AES2 input to AES2 outputs
set cross8	OK	Set AES2 to AES1 and AES2 outputs
set cross4	OK	Set AES1 input to AES2 outputs and AES2 input to AES1 outputs

General environmental requirements for Network flashlink® equipment

1. The equipment will meet the guaranteed performance specification under the following environmental conditions:

- Operating room temperature range 0°C to 45°C
- Operating relative humidity range up to 90% (non-condensing)

2. The equipment will operate without damage under the following environmental conditions:

- Temperature range -10°C to 50°C
- Relative humidity range up to 95% (non-condensing)

Product Warranty

The warranty terms and conditions for the product(s) covered by this manual follow the General Sales Conditions by Network Electronics AS. These conditions are available on the company web site of Network Electronics AS:

www.network-electronics.com

Materials declaration and recycling information

Materials declaration

For product sold into China after 1st March 2007, we comply with the "Administrative Measure on the Control of Pollution by Electronic Information Products". In the first stage of this legislation, content of six hazardous materials has to be declared. The table below shows the required information.

組成名稱 Part Name	Toxic or hazardous substances and elements					
	鉛 Lead (Pb)	汞 Mercury (Hg)	镉 Cadmium (Cd)	六价铬 Hexavalent Chromium (Cr(VI))	多溴联苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)
DA-AES	X	O	O	O	O	O

O: Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in SJ/T11363-2006.

X: Indicates that this toxic or hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement in SJ/T11363-2006.

Environmentally-friendly use period

The manual must include a statement of the "environmentally friendly use period". This is defined as the period of normal use before any hazardous material is released to the environment. The guidance on how the EFUP is to be calculated is not finalised at the time of writing. See http://www.aeanet.org/GovernmentAffairs/qfLeOpAaZXaMxqGjSFbEidSdPNtpT.pdf for an unofficial translation of the draft guidance. For our own products, Network Electronics has chosen to use the *50 year figure* recommended in this draft regulation.

Network Electronics suggests the following statement on An "Environmentally Friendly Use Period" (EFUP) setting out normal use:

> **EFUP is the time the product can be used in normal service life without leaking the hazardous materials. We expect the normal use environment to be in an equipment room at controlled temperature range (0ºC - 40ºC) with moderate humidity (< 90%, non-condensing) and clean air, not subject to vibration or shock.**

Further, a statement on any hazardous material content, for instance, for a product that uses some tin/lead solders:

> **Where a product contains potentially hazardous materials, this is indicated on the product by the appropriate symbol containing the EFUP. The hazardous material content is limited to lead (Pb) in some solders. This is extremely stable in normal use and the EFUP is taken as 50 years, by comparison with the EFUP given for Digital Exchange/Switching Platform in equipment in Appendix A of "General Rule of Environment-Friendly Use Period of Electronic Information Products". This is indicated by the product marking:**

It is assumed that while the product is in normal use, any batteries associated with real-time clocks or battery-backed RAM will be replaced at the regular intervals.

The EFUP relates only to the environmental impact of the product in normal use, it does not imply that the product will continue to be supported for 50 years.

Recycling information

Network Electronics provides assistance to customers and recyclers through our web site http://www.network-electronics.com. Please contact Network Electronics' Customer Support for assistance with recycling if this site does not show the information you require.

Where it is not possible to return the product to Network Electronics or its agents for recycling, the following general information may be of assistance:

Before attempting disassembly, ensure the product is completely disconnected from power and signal connections.

All major parts are marked or labelled to show their material content.

Depending on the date of manufacture, this product may contain lead in solder.

Some circuit boards may contain battery-backed memory devices.

EC Declaration of Conformity

MANUFACTURER	Network Electronics AS P.B. 1020, N-3204 SANDEFJORD, Norway	
AUTHORISED REPRESENTATIVE (Established within the EEA)	Not applicable	
MODEL NUMBER(S)	DA-AES	
DESCRIPTION	AES Distribution Amplifier	
DIRECTIVES this equipment complies with	LVD 73/23/EEC EMC 2004/108/EEC	
HARMONISED STANDARDS applied in order to verify compliance with Directive(s)	EN 55103-1:1996 EN 55103-2:1996	
TEST REPORTS ISSUED BY	**Notified/Competent Body**	**Report no:**
	Nemko	E07379.00
TECHNICAL CONSTRUCTION FILE NO	Not applicable	
YEAR WHICH THE CE-MARK WAS AFFIXED	2008	
TEST AUTHORIZED SIGNATORY		
MANUFACTURER	**AUTHORISED REPRESENTATIVE (Established within EEA)**	**Date of Issue**
		2008-07-14
		Place of Issue
	Not applicable	Sandefjord, Norway

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